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FIG. 1

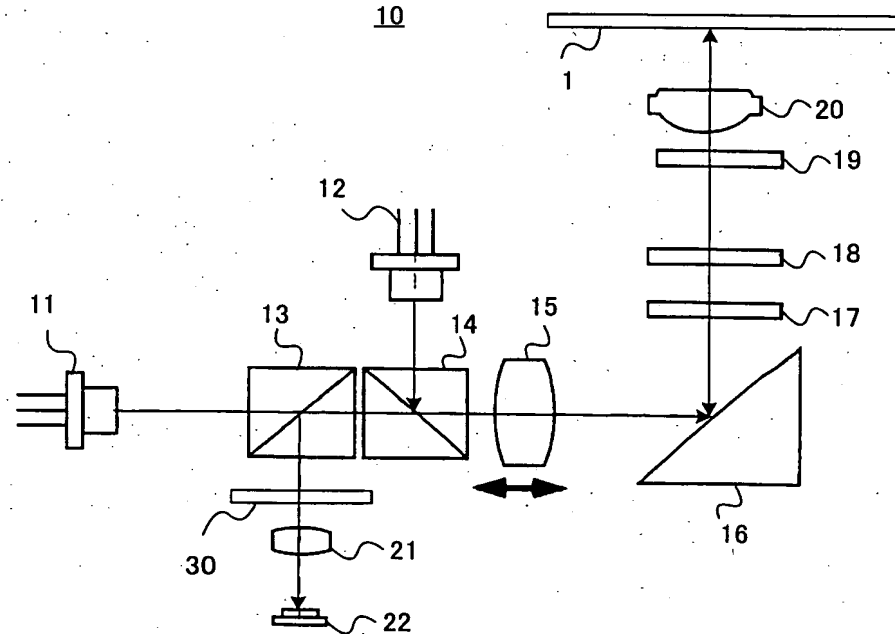
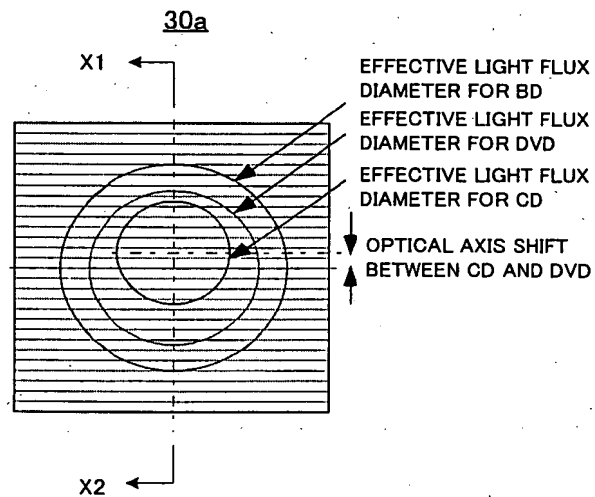


FIG. 2



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FIG. 3A

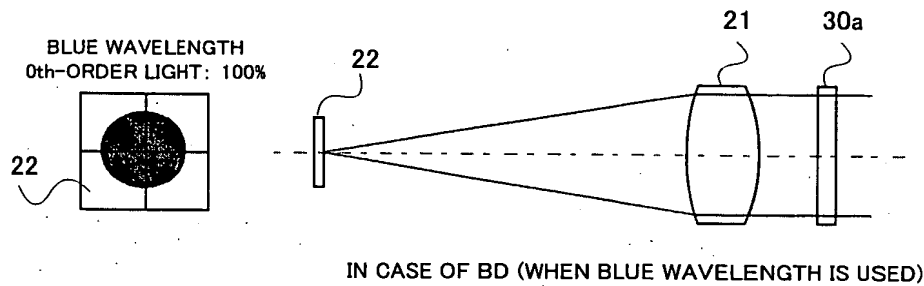


FIG. 3B

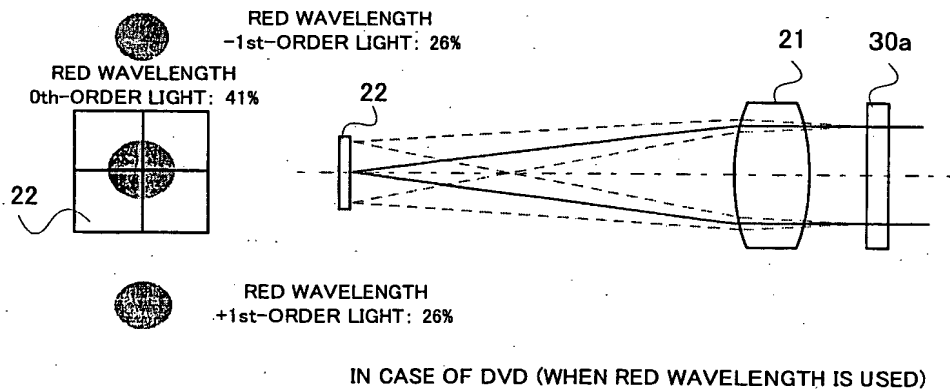
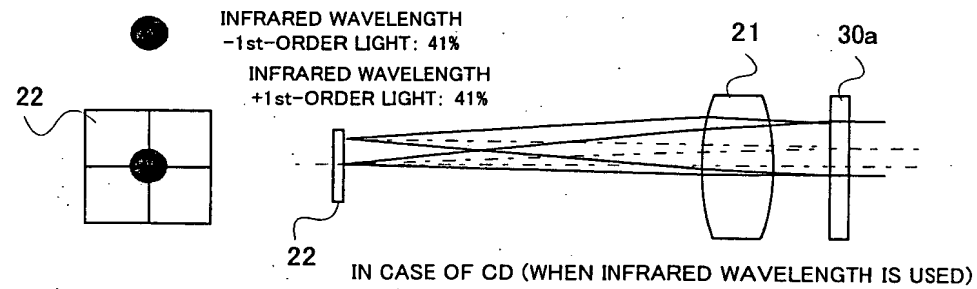
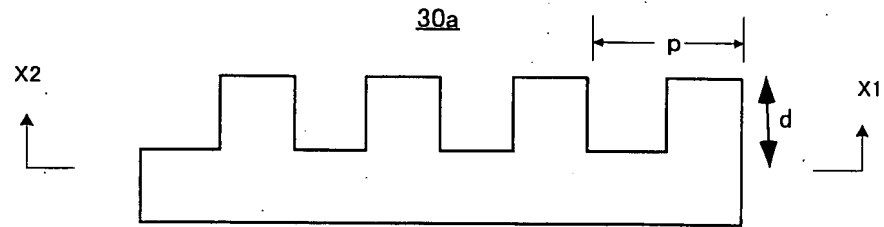


FIG. 3C



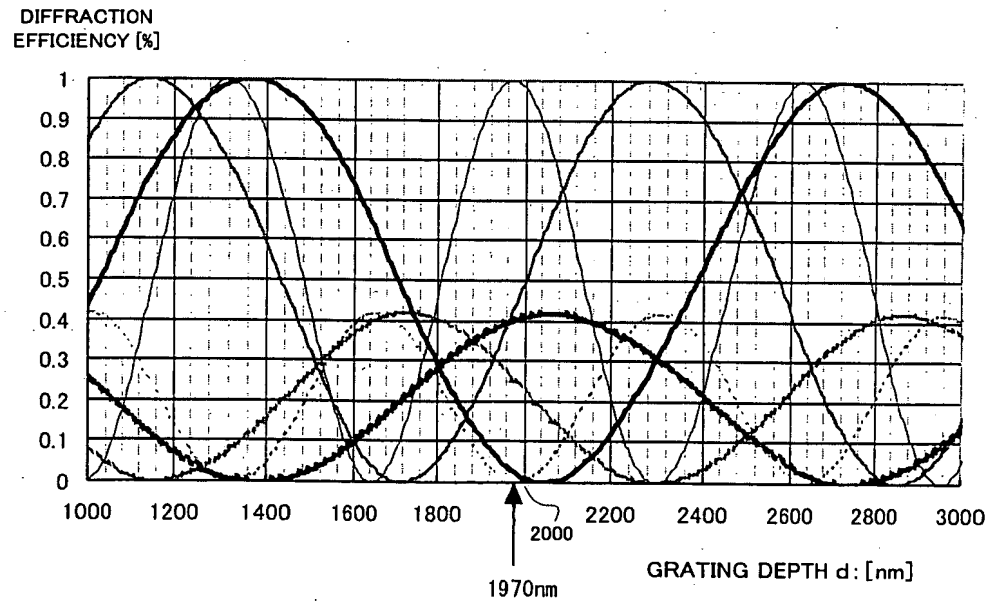
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FIG. 4A



	DIFFRACTION EFFICIENCY [%]		GRATING DEPTH D[λ]
	0th-ORDER LIGHT	\pm 1st-ORDER LIGHT	
BLUE (405nm)	100	0	3
RED (660nm)	41	26	1.89
INFRARED (780nm)	3	41	1.60

FIG. 4B

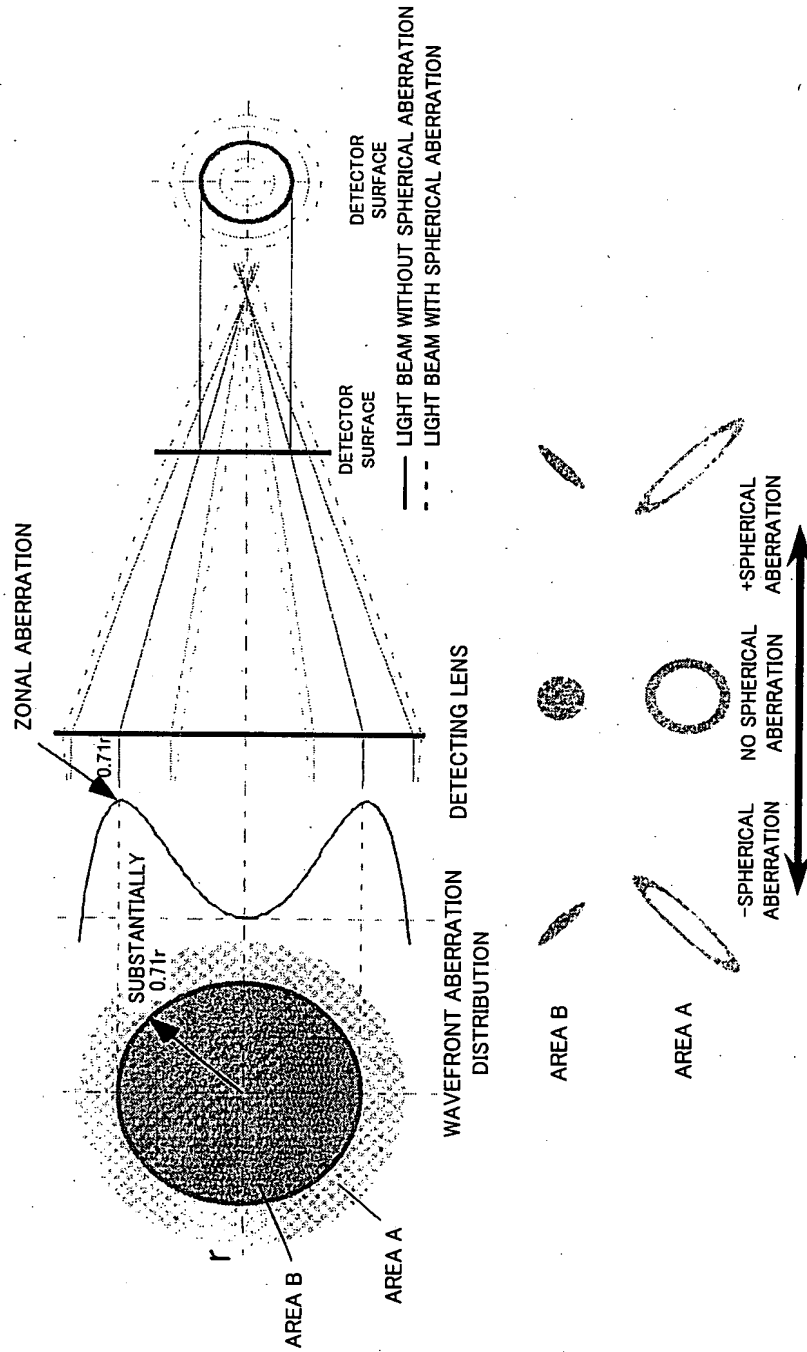


REFRACTIVE INDEX:
 n405 : 1.619
 n660 : 1.580
 n780 : 1.574

—	405nm 0th-ORDER LIGHT
.....	660nm 0th-ORDER LIGHT
—	780nm 0th-ORDER LIGHT
- - - -	405nm 1st-ORDER LIGHT
—	660nm 1st-ORDER LIGHT
· · · ·	780nm 1st-ORDER LIGHT

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FIG. 5



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FIG. 6

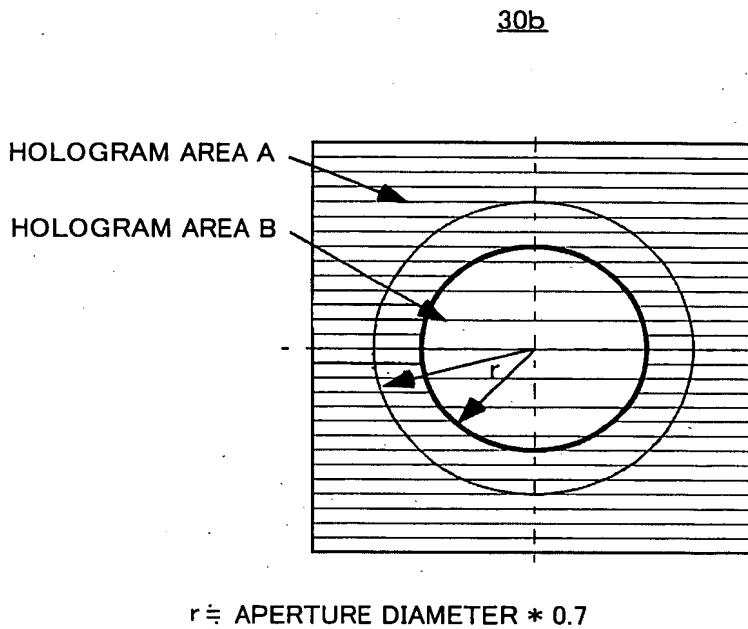
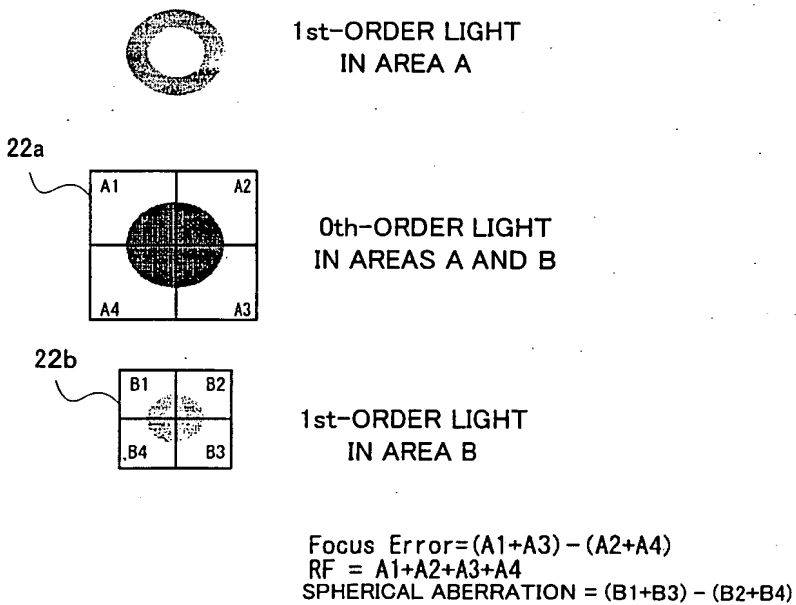


FIG. 7



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FIG. 8

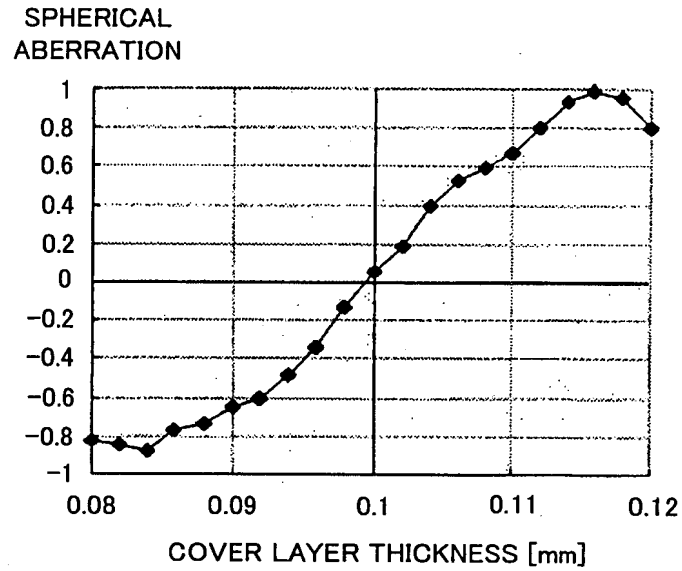
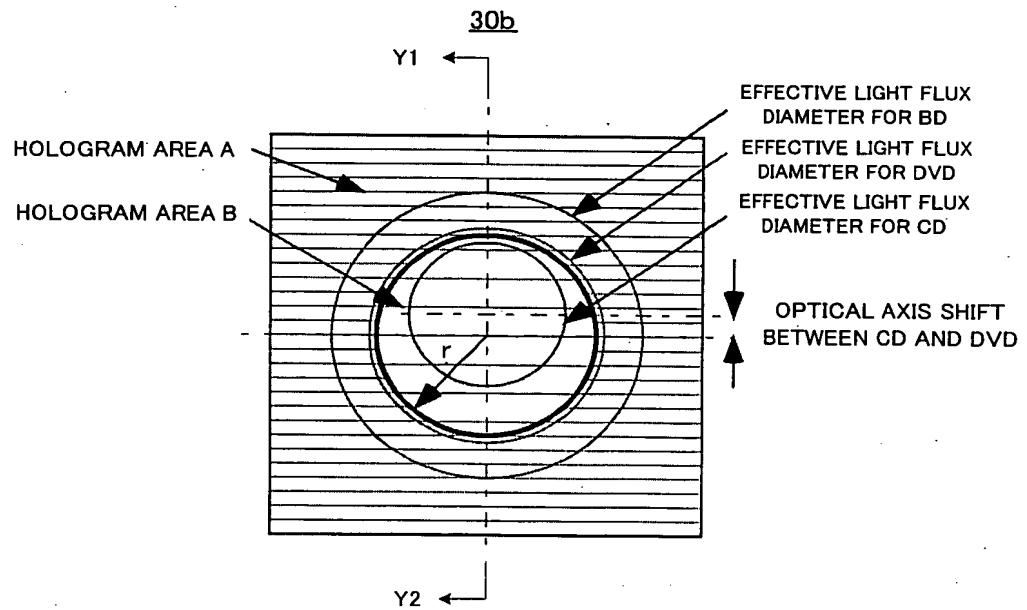
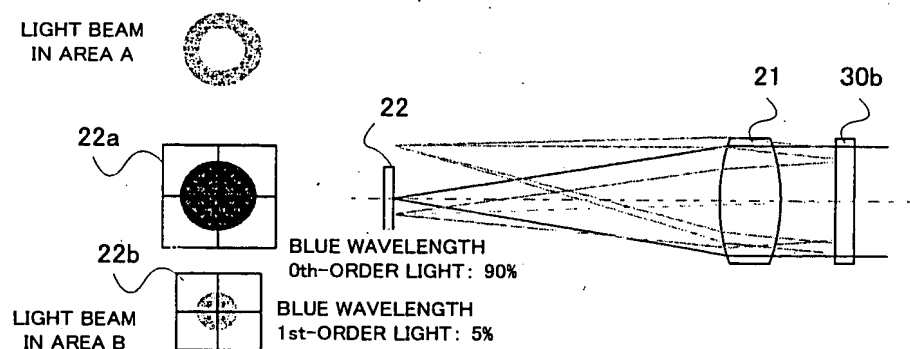


FIG. 9



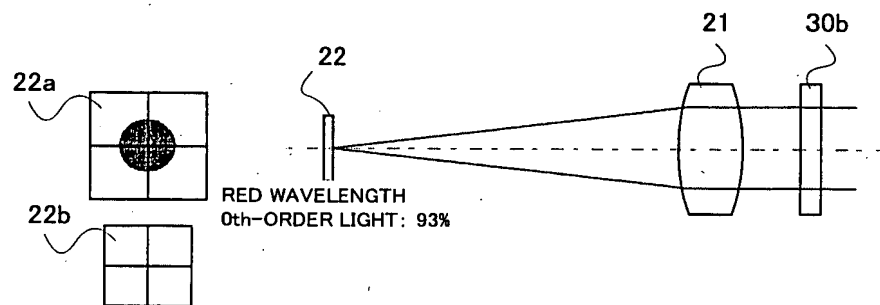
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FIG. 10A



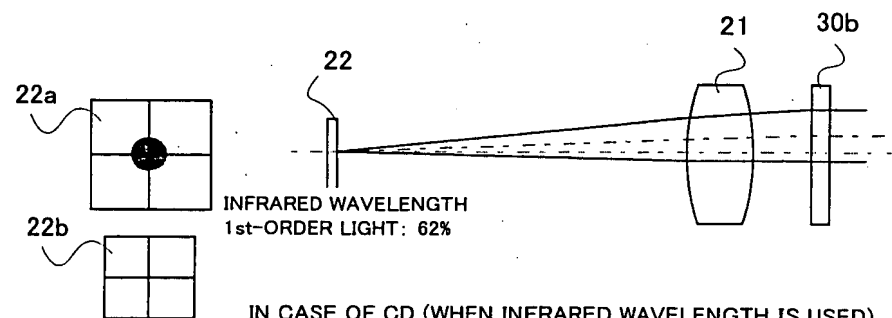
IN CASE OF BD (WHEN BLUE WAVELENGTH IS USED)

FIG. 10B



IN CASE OF DVD (WHEN RED WAVELENGTH IS USED)

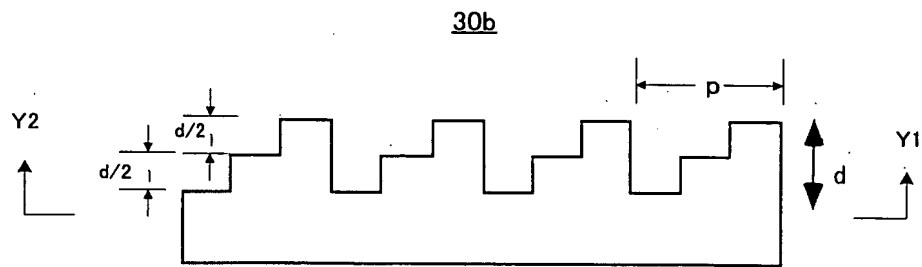
FIG. 10C



IN CASE OF CD (WHEN INFRARED WAVELENGTH IS USED)

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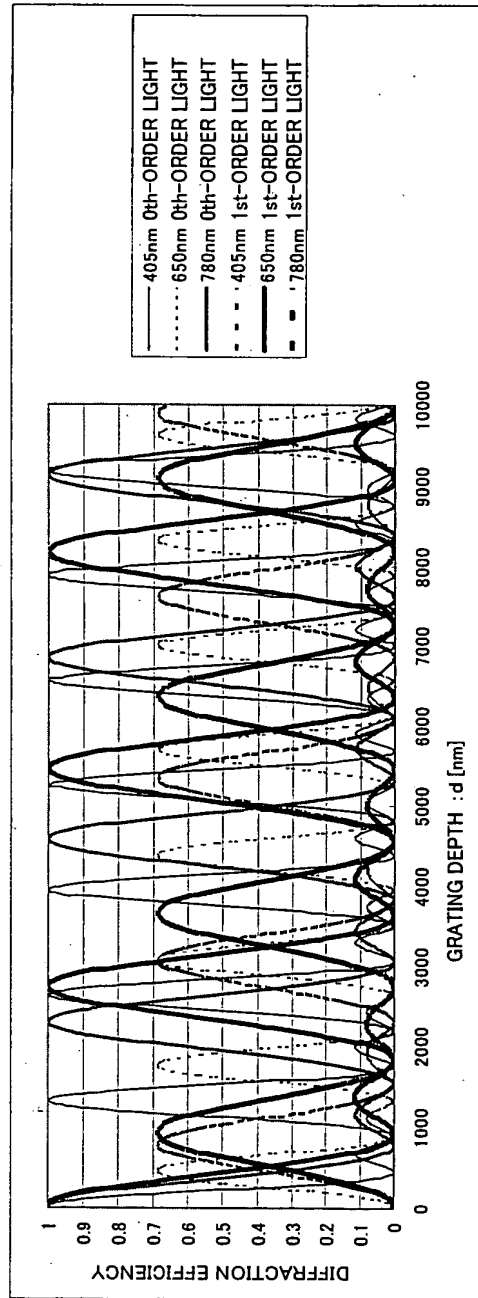
FIG. 11



	DIFFRACTION EFFICIENCY [%]		GRATING DEPTH
	0th-ORDER LIGHT	1st-ORDER LIGHT	D [λ]
BLUE (405nm)	90	5	14.1
RED (660nm)	93	3	8.1
INFRARED (780nm)	4	62	6.8

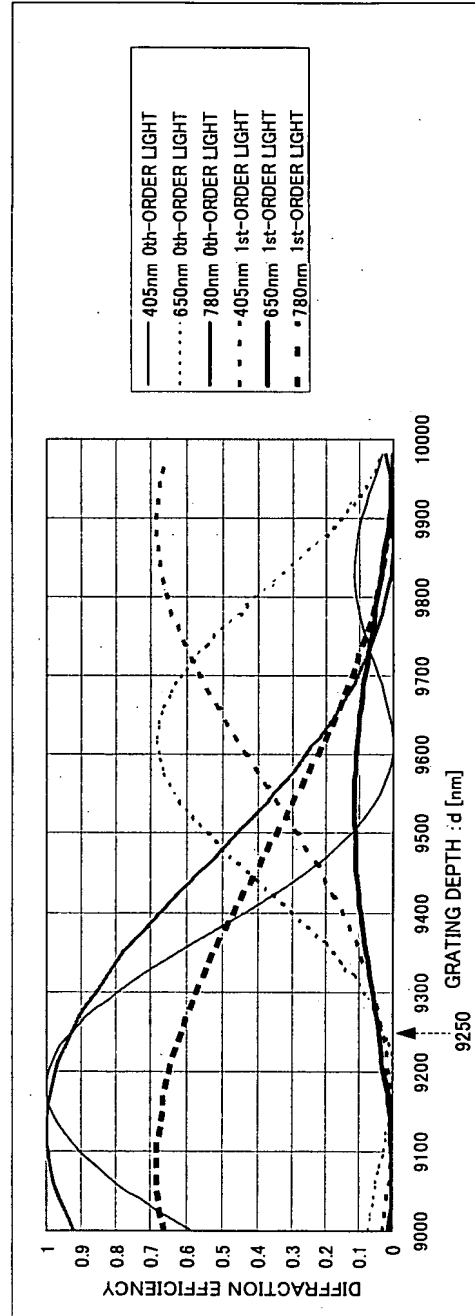
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FIG. 12A



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FIG. 12B



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FIG. 13A

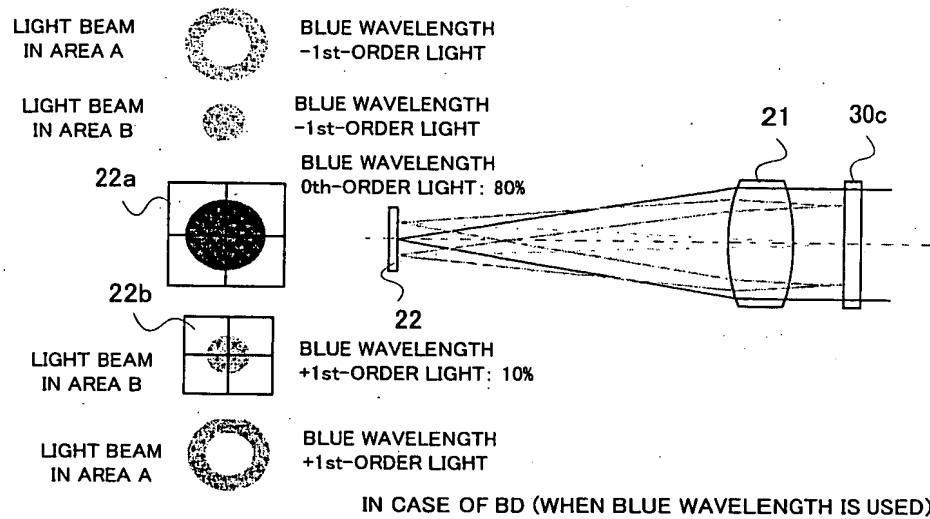


FIG. 13B

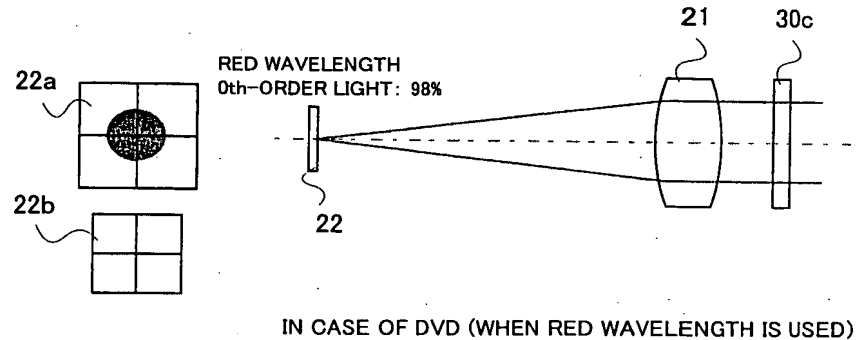
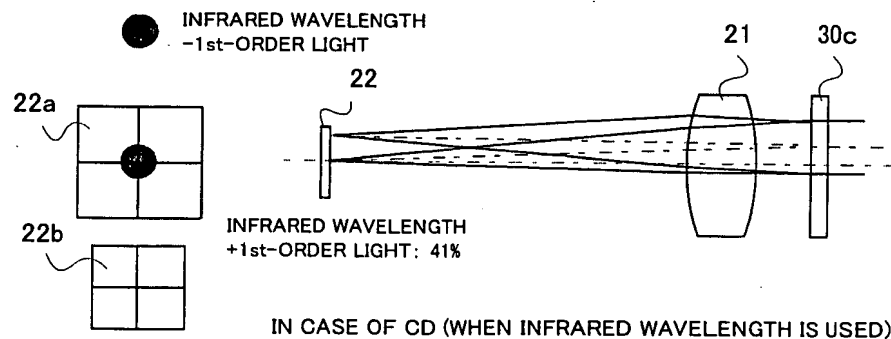
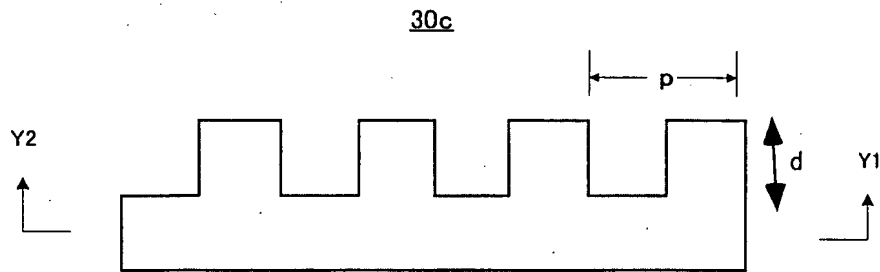


FIG. 13C



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FIG. 14



	DIFFRACTION EFFICIENCY [%]		GRATING DEPTH D [λ]
	0th-ORDER LIGHT	\pm 1st-ORDER LIGHT	
BLUE (405nm)	80	10	5.2
RED (660nm)	98	1	3
INFRARED (780nm)	2	41	2.5

FIG. 15A

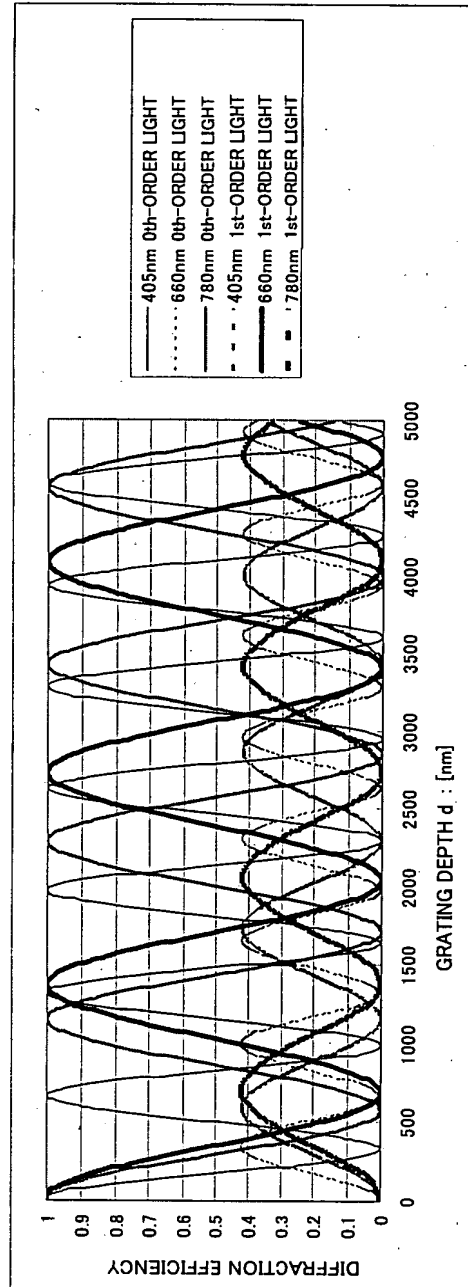
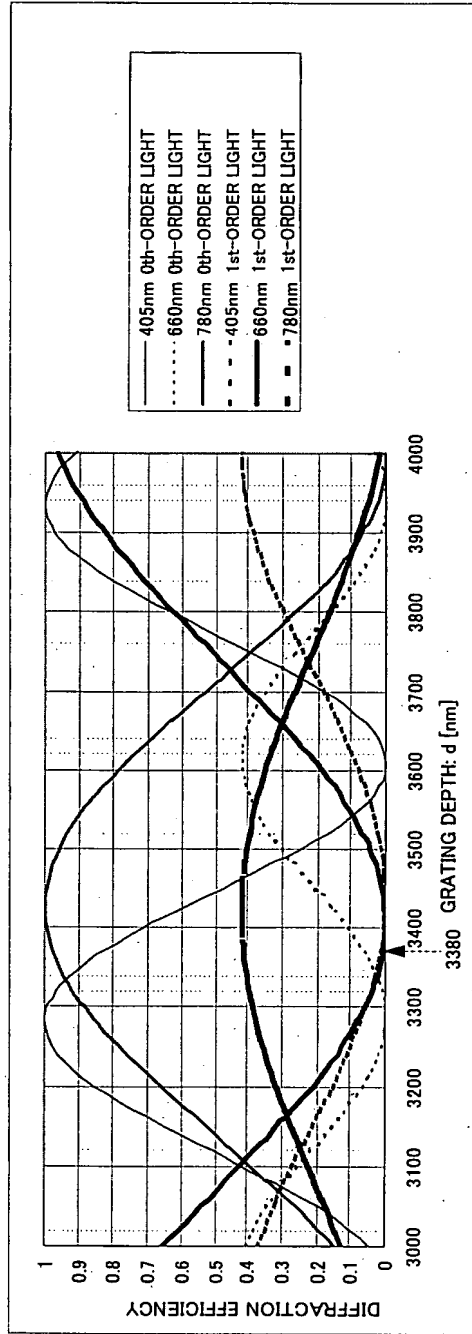


FIG. 15B



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FIG. 16A

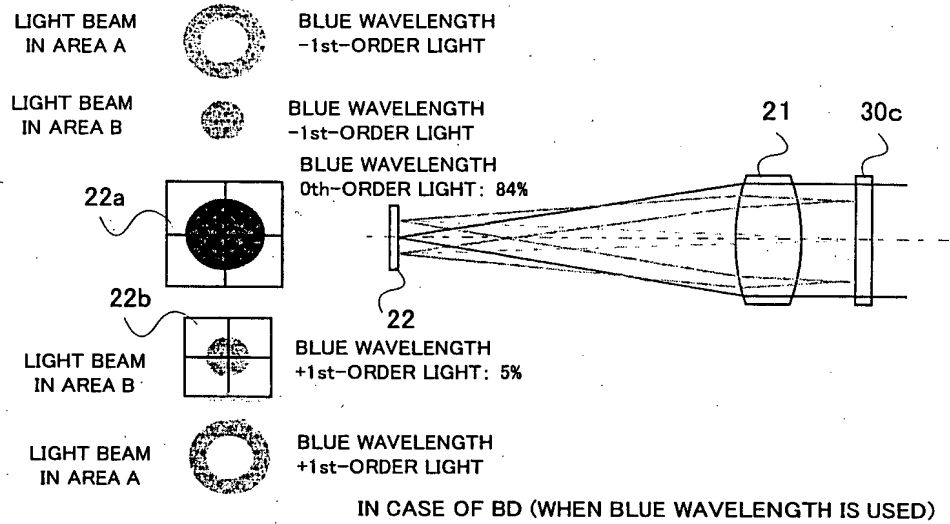


FIG. 16B

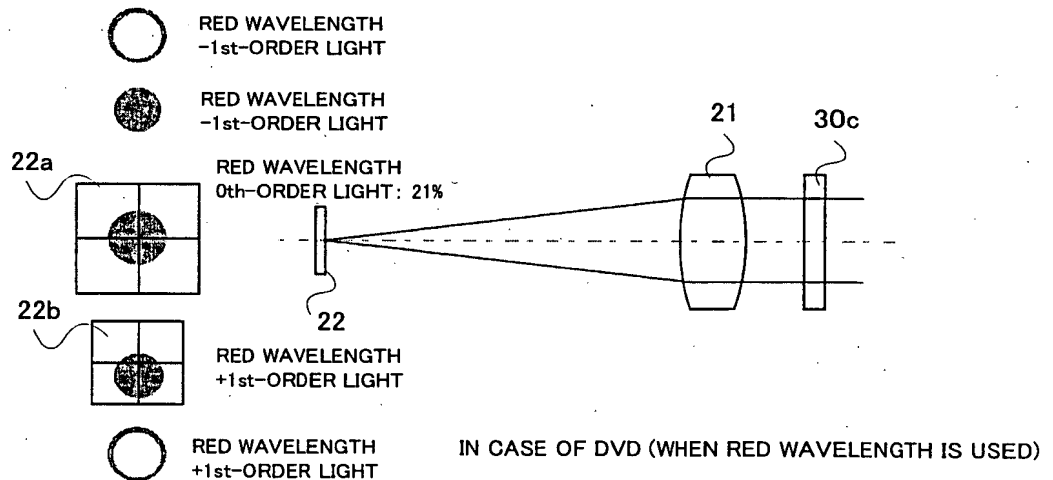
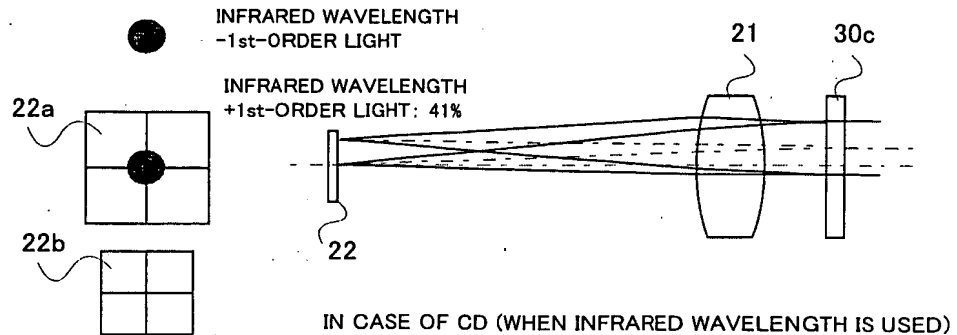
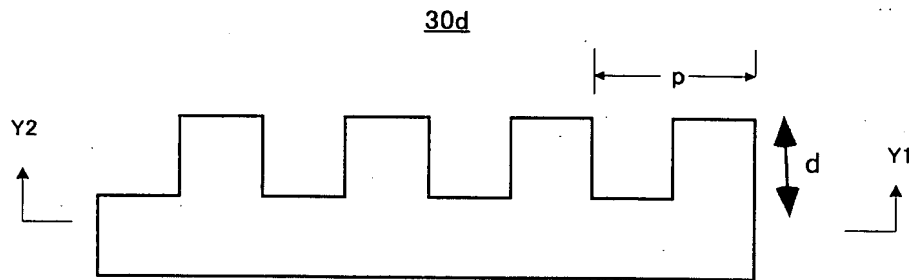


FIG. 16C



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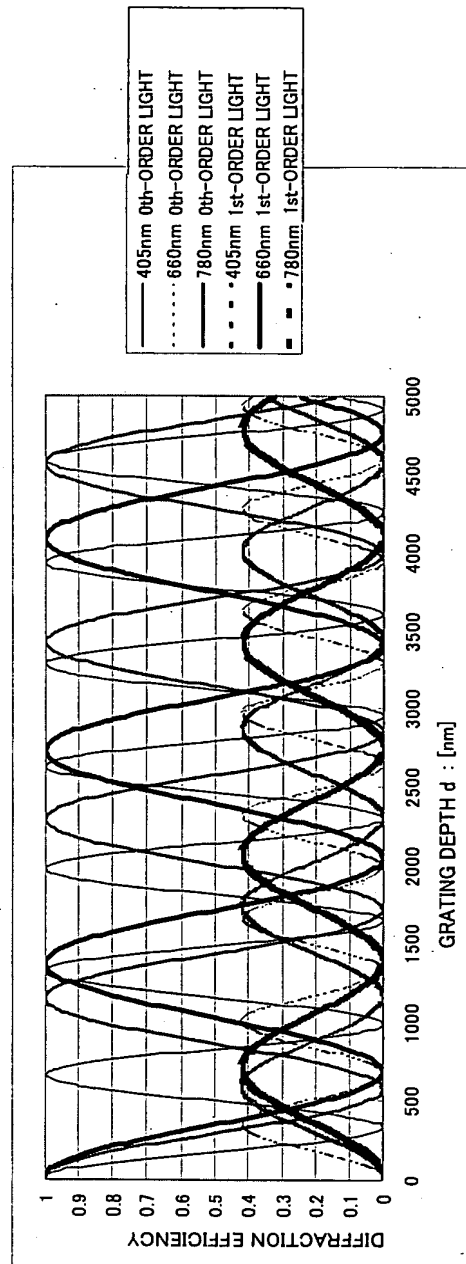
FIG. 17



	DIFFRACTION EFFICIENCY [%]		GRATING DEPTH D [λ]
	0th-ORDER LIGHT	\pm 1st-ORDER LIGHT	
BLUE (405nm)	84	5	1.1
RED (660nm)	21	33	0.66
INFRARED (780nm)	2	41	0.55

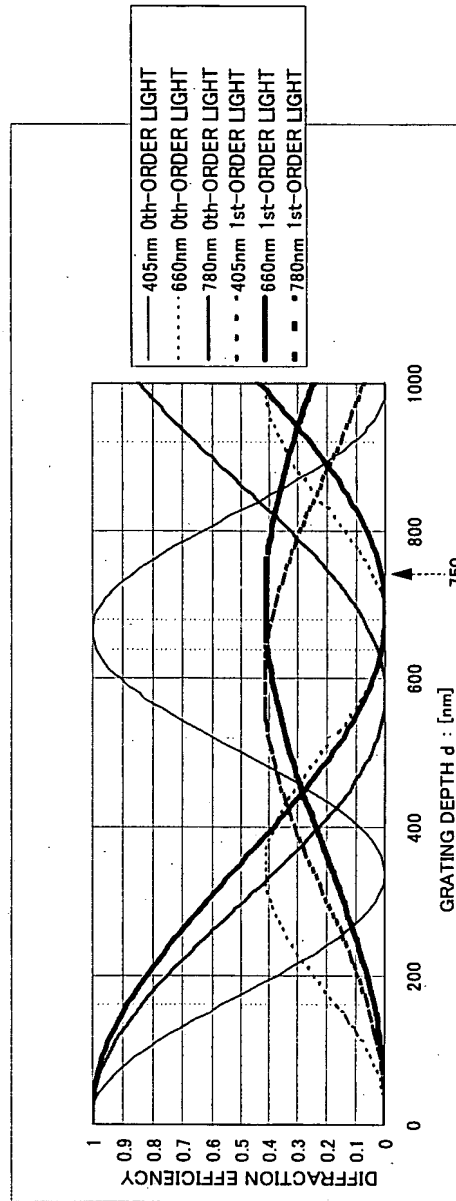
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FIG. 18A



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FIG. 18B



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FIG. 19A

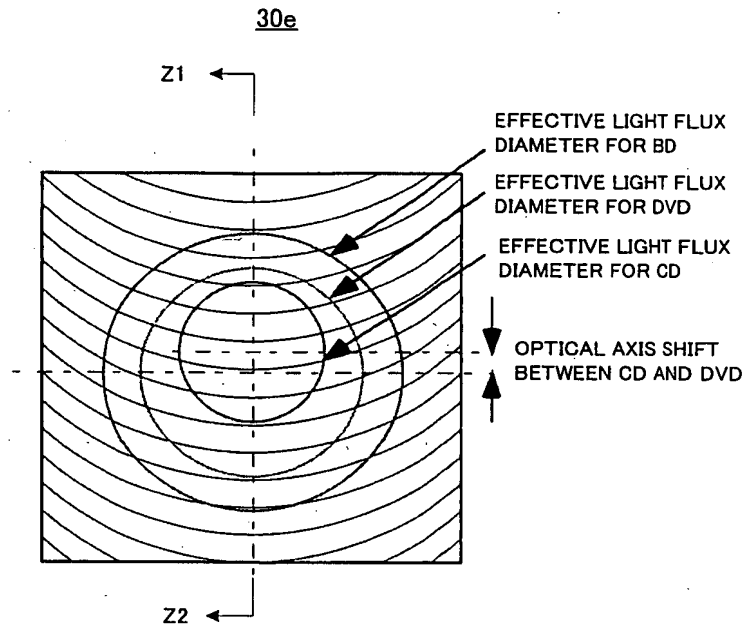
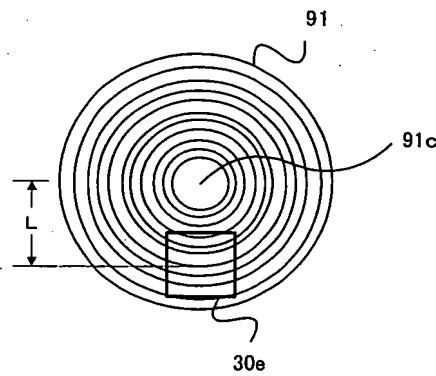


FIG. 19B



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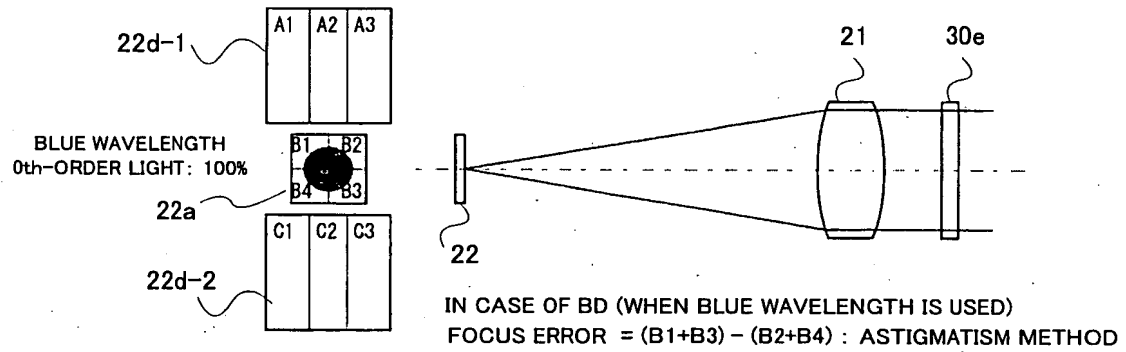


FIG. 20A

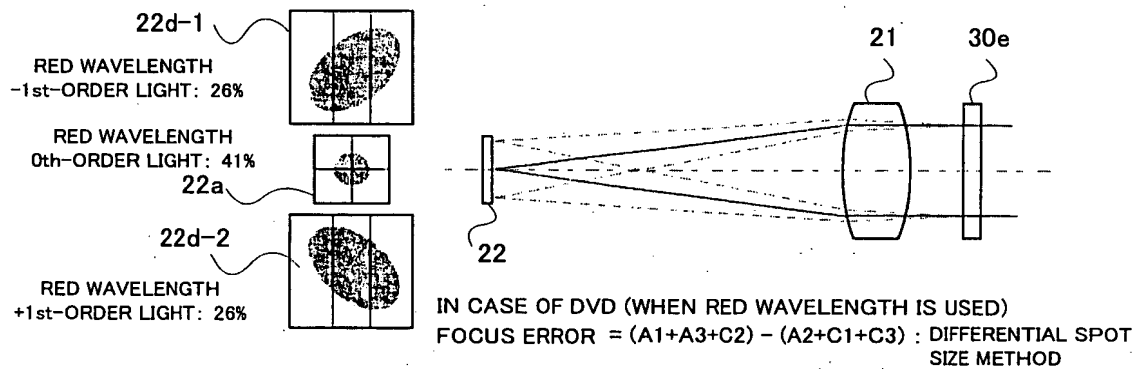


FIG. 20B

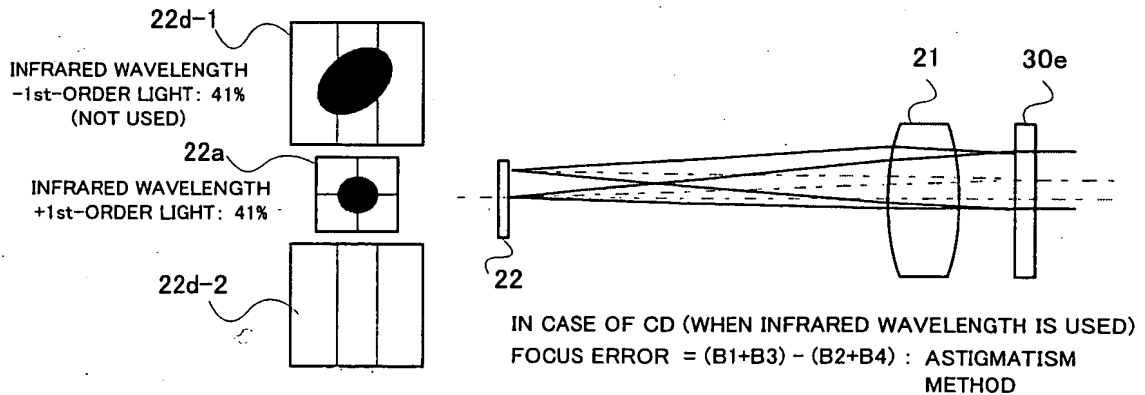
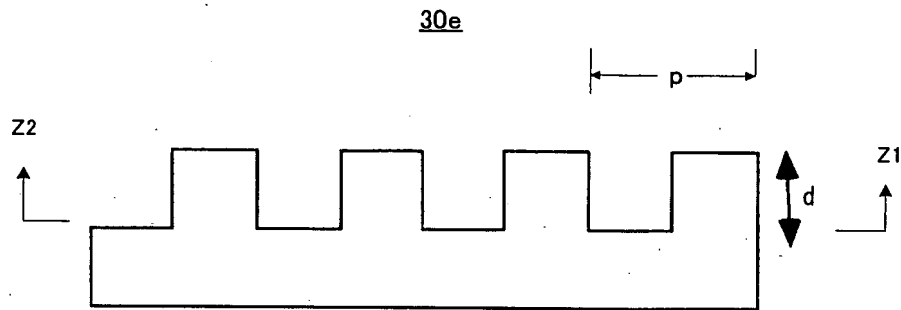


FIG. 20C

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FIG. 21



	DIFFRACTION EFFICIENCY [%]		GRATING DEPTH D [λ]
	0th-ORDER LIGHT	\pm 1st-ORDER LIGHT	
BLUE (405nm)	100	0	3
RED (660nm)	41	26	1.89
INFRARED (780nm)	3	41	1.60

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